

## ABSTRACT OF THE DISCLOSURE

**[0044]** Electrical connection is provided in a transducer stack through a backing block. A flexible circuit is sandwiched between pieces of acoustic attenuating material. For example, 2 to 200 or more flexible circuits are stacked in alternating layers with pieces of acoustically attenuating material. The alternating layers are then connected together to form a backing block with Z-axis electrical connection. The top surface of the connected backing block includes a plurality of exposed electrical traces from the flex circuit. Since flex circuits are used, the electrical traces are precisely aligned along one dimension. Since pre-formed acoustic attenuating material pieces are used, precise alignment is provided along a second or orthogonal dimension. The substrate holding the electrical traces in the flexible circuits provides more stability and allows for easier connection to circuit boards as compared to individual strips of metal.